Effect of Yogic Practices and Specific Body Weight Exercises on the Physical and Psychological Variables among the Pre-Service Teachers of Goa

A

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INTRODUCTION

BODY WEIGHT EXERCISE

Bodyweight exercises are strength training exercises that use the individual's own weight to provide resistance against gravity. Bodyweight exercises can enhance a range of bio motor abilities including strength, power, endurance, speed, flexibility, coordination and balance. This type of strength training has grown in popularity for both recreational and professional athletes. Bodyweight training utilizes simple abilities such as pushing, pulling, squatting, bending, twisting and balancing. Movements such as the push-up, the pull-up, and the sit-up are some of the most common bodyweight exercises. While some exercises may require some type of equipment, the majority of bodyweight exercises require none. For those exercises that do require equipment, common items found in the household are usually sufficient (such as a bath towel for towel curls), or substitutes can usually be improvised (for example, using a horizontal tree branch to perform pull ups). Therefore, bodyweight exercises are convenient when travelling or on vacation, when access to a gym or specialized equipment may not be possible. Another advantage of bodyweight training is that there are no costs involved.

YOGIC PRACTICES AND PHYSICAL FITNESS

Yogic practices involve yoga asana. Various yoga exercises are performed by individuals who know the importance of yogic practices. Physical fitness is your ability to carry out tasks without undue fatigue. Physical fitness is a state of health and well-being and, more specifically, the ability to perform aspects of sports, occupations and daily activities. Physical fitness is generally achieved through proper nutrition, moderate-vigorous physical exercise, and sufficient rest. For physical fitness activity to benefit an individual, the exertion triggers a

response called a stimulus. Exercise with the correct amount of intensity, duration, and frequency can produce a significant amount of improvement. The person may overall feel better, but the physical effects on the human body take weeks or months to notice and possibly years for full development.

For training purposes, exercise must provide a stress or demand on either a function or tissue. To continue improvements, this demand must eventually increase little over an extended period of time. This sort of exercise training has three basic principles: overload, specificity, and progression. These principles are related to health but also enhancement of physical working capacity. Exercise is task-oriented fitness in which a person's ability to perform a specific activity with a reasonable efficiency is seen in sports or in gym. Exercise plays an important role in overall physical development of the body.

Physical fitness plays a very important role in overall development of an individual's body. Thus making them feel good about them self's. Physical fitness comprises two related concepts: general fitness and specific fitness physical fitness is generally achieved through exercise, correct nutrition and enough rest.

PHYSICAL VARIABLES AND PSYCHOLOGICAL VARIABLES

Physical variable refers to strength, power, agility, cardiovascular endurance and coordination which can be seen and observed directly. Whereas psychological variables cannot be observed directly. Psychological variable cannot be observed directly as they often involve internal processes and a complex set of behaviors. You can often tell whether someone is male or female just by looking. You can ask people how old they are and be reasonably sure that they know and will tell you. Although people might not know or want to tell you how much they weigh, you can have them step onto weighing scale. There are some variables which we cannot accurately assess, like people's level of intelligence by looking at them, and we certainly cannot put their self-esteem on a weighing scale to measure it.

These kinds of variables are called as psychological variables which include personality traits, emotional states, attitudes, mental health etc.

FLEXIBILITY

Flexibility is the range of motion in a joint or group of joints or the ability to move joints effectively through a complete range of motion. Flexibility training includes stretching exercises to lengthen the muscles and may include activities like yoga. Improving your flexibility can help you move more comfortably throughout the day. Flexibility is improved by stretching. Stretching should only be started when muscles are warm and the body temperature is raised. To be effective while stretching, force applied to the body must be held just beyond a feeling of pain and needs to be held for at least ten seconds. Increasing the range of motion creates good posture and develops proficient performance in everyday activities increasing the length of life and overall health of the individual.

MUSCULAR ENDURANCE

Muscular endurance is the ability of a muscle or group of muscles to perform repetitive contractions against a force for an extended period of time. The greater your muscular endurance the higher number of repetitions you could complete. By building muscular endurance you will be able to perform physical tasks for a longer period. Whilst strength allows you to lift a force, endurance allows you to continue doing this over time

EMOTIONS AND MOOD

Emotion is a strong feeling deriving from one's circumstances, mood, or relationships with others. Emotion is a mental state associated with the nervous system brought on by chemical changes variously associated with thoughts, feelings, behavioral responses, and a degree of pleasure or displeasure. Emotions

can be defined as a positive or negative experience that is associated with a particular pattern of physiological activity. Emotions produce different physiological, behavioral and cognitive changes.

Mood is a temporary state of mind or feeling. It is the frame of mind at a particular time. Moods are more generalized. They're not tied to a specific incident, but a collection of inputs. Mood is heavily influenced by several factors: the environment **(**weather, lighting, and people around us), physiology **(**what we've been eating, how we've been exercising, how healthy we are), and finally our mental state (where we're focusing attention and our current emotions). Moods can last minutes, hours, probably even days.

MENTAL HEALTH

According to WHO (World Health Organization), mental health is a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, that can work productively and fruitfully, and is able to make a contribution to his or her community. World Health Organization stresses that mental health is not just the absence of mental disorder.

STATEMENT OF PROBLEM

Emotions play an important role in one's life. Pleasant environment leads to good mood and unpleasant feeling leads to bad mood. In teaching profession it is very important to have a balance state of mind so that the teacher can efficiently discharge their duties.

It is said that exercise can improve mental health and emotional states. This improvement is due to an increase in blood flow to the brain and the release of hormones. Working out can improve one's mental alertness and it can reduce fatigue and a reduction in stress levels. Being fit can improve one's self-esteem

and increase opportunity for social interaction. Therefore because of this, the researcher out of curiosity felt the need to develop a specific exercise program with combination of three yoga exercises and three specific body weight exercises and study and understand the effect of specific exercise program on the physical and psychological variables of the pre-service teachers of Goa.

OBJECTIVES OF THE STUDY

1. To develop a Specific Exercise Program with combination of three yoga exercises and three body weight exercises for the Pre-service teachers in the state of Goa.

2. To study effect of specific exercise program on the physical variables of the Pre-service teachers in the state of Goa.

2.1. To study effect of specific exercise program on the Flexibility of the Pre-service teachers in the state of Goa.

2.2. To study effect of specific exercise program on the Muscular Endurance of the Pre-service teachers in the state of Goa.

3. To study effect of specific exercise program on the Psychological variables of the Pre-service teachers in the state of Goa.

3.1. To study effect of specific exercise program on the Mental Health of the Pre-service teachers in the state of Goa.

3.2. To study effect of specific exercise program on the Emotional States and Mood of the Pre-service teachers in the state of Goa.

SCOPE OF THE STUDY:

- The study will create awareness of simple yoga exercises and specific body weight exercises to remain fit for life among pre-service teachers of Goa.

- The study will help to know the effect of specific exercise program on the selected physical variables of the Pre-service teachers in the state of Goa.
- The study will help to know the effect of specific exercise program on the selected psychological variables of the Pre-service teachers in the state of Goa.
- The study will serve as the base for developing such other specific exercise program to check its correlation of motor fitness with other physical and psychological variables.
- The study will pave way for further research in this area.

HYPOTHESIS

Ha1: There will be significance difference between pre-test scores and post-test score of flexibility of the pre-service teachers of experimental group.

Ha2: There will be significance difference between pre-test scores and post-test score of muscular endurance of the pre-service teachers of experimental group.

Ha3: There will be significance difference between pre-test scores and post-test score of mental health of the pre-service teachers of experimental group.

Ha4: There will be significance difference between pre-test scores and post-test score of emotional states of the pre-service teachers of experimental group.

Ha5: There will be positive correlation between specific exercise program and the flexibility of the pre-service teachers of experimental group.

Ha6: There will be positive correlation between specific exercise program and the muscular endurance of the pre-service teachers of experimental group.

Ha7: There will be positive correlation between specific exercise program and the mental health of the pre-service teachers of experimental group.

Ha8: There will be positive correlation between specific exercise program and the emotional states of the pre-service teachers of experimental group.

ASSUMPTIONS

- It is assumed that the pre-service teachers will answer the questions truthfully.
- It is assumed that the pre-service teachers will perform the fitness test sincerely.
- It is assumed that the pre-service teachers will participate in the study voluntary and sincerely.
- It is assumed that the sample is the representation of the desired population of the study.
- It is assumed that the pre-service teachers enjoy the physical education classes.
- It is assumed that pre-service teachers are aware about importance of fitness in day to day life.

DELIMITATIONS

- The study will be delimited to the pre-service teachers who are enrolled for bachelors in education program or integrated program (B.Sc. B.Ed / B.A B.Ed) in the state of Goa.
- The study will be delimited to the experimental group only (One Hundred pre-service teachers of Goa).

- The study will be delimited to standardized V-sit and reach test for measuring flexibility of pre-service teachers of Goa.
- The study will be delimited to standardized 1-minute push-up test for measuring muscular endurance of pre-service teachers of Goa.
- The study will be delimited to standardized mental health battery questionnaire for measuring mental health of pre-service teachers of Goa.
- The study will be delimited to standardized 8 state questionnaire for measuring emotional states and moods of pre-service teachers of Goa.
- The study will be delimited to the specific exercise program designed by the researcher with combination of three yoga exercises and three specific body weight exercises.
- The specific exercise program will be delimited to three times a week for a period of twenty weeks (five months).

LIMITATIONS

- The pre-service teacher's socio-cultural background will be the limitation to the study.
- The study will be limited to pre-service teacher's individual performance capacities.
- The pre-service teacher's diet and sleeping pattern will be the limitation to the study.
- The pre-service teacher's sports competition level of participation will be the limitation to the study.

OPERATIONAL DEFINITIONS

Yogic Practices: Here yogic practices refer to the three yoga exercises used in developing the specific exercise program.

Specific Body Weight Exercises: Here specific body weight exercises refer to the simple body weight exercises which focus on upper body, core muscle and lower body which will be used in develop the specific exercise program.

Specific Exercise Program: Here specific exercise program is the training program designed by the researcher with combinations of three yoga exercises and three body weight exercises which will help to get the desired result.

Physical Variable: Here physical variable refers to the two physical components namely flexibility and muscular endurance that will be tested in this study.

Psychological Variable: Here psychological variable refers to the two psychological components namely mental health and emotional states that will be tested in this study.

Pre-service teachers: Here Pre-service teachers refers to all the students who are enrolled for bachelors in education program or integrated program (B.Sc. B.Ed / B.A B.Ed) in the state of Goa affiliated to Goa University.

Experimental Group: Here Experimental group is a group of one hundred pre-service teachers who are enrolled for bachelors in education program or integrated program (B.Sc. B.Ed / B.A B.Ed) in the state of Goa affiliated to Goa University on whom the study will be conducted.

Keller, S., Seraganian, P. (1984) conducted a study on physical fitness level and autonomic reactivity to psychosocial stress, in which they conducted two studies that explored the influence of aerobic fitness level on autonomic reactivity to psychosocial stress. Experiment 1 employed a co relational, repeated measures design. A total of 45 men who were physically trained, untrained, or training were tested at three-week intervals over nine weeks. The measure of autonomic reactivity was liability in electro dermal activity during two speeded mental tasks designed to induce psychosocial stress. In the initial test session, trained subjects showed faster autonomic recovery from this stress than did untrained or training subjects; in subsequent test sessions involving the repeated administration of the same tasks, the three groups were indistinguishable. Experiment 2 employed 60 subjects who were randomly assigned to 10-week aerobic exercise, meditation, or music appreciation programs. In each session, two psychosocial stressors selected from a battery of six tasks were counterbalanced across treatments and sessions. Over the course of the study, participants in the exercise program improved significantly in physical fitness and also showed faster recovery in the electro dermal response. This quicker autonomic recovery may allow the aerobically fit to cope more effectively with emotional stress.

Hughes, J. R., Casal, D. C., Leon, A.S. (1986) conducted a research on Psychological effects of exercise: A randomized cross-over trial. The effect of beginning an exercise program on the mood of sedentary men who were free of psychopathology was studied. Fourteen men were randomly assigned to either an exercise program or a control period for 12 weeks and then switched to the converse condition. The exercise was nonsocial and of moderate intensity. Exercise did not improve anger, tension, confusion, depression, fatigue, vigor, or total mood disturbance more than a control period. The study found that the beginning an exercise program, in itself produces minimal psychological benefits.

The hypothesize that other conditions, e.g. the presence of emotional problems, socialization along with exercise, or a training effect must be present for exercise to produce psychological benefits.

Davis, C. & Cowles, M. Sex Roles (1991) conducted a research on body image and exercise: A study of relationships and comparisons between physically active men and women. A group of physically active women (n=112) and men (n=88) of a broad range of ages were compared on a number of variables related to body image, weight and diet concerns, and degree of exercise participation. Interrelationships between these measures were also examined. Results indicated that men and women were equally dissatisfied with their current weight. Although most women wanted to lose weight, the men were evenly divided between those who wanted to lose and those who wanted to gain. Women, however, were more dissatisfied with their bodies and placed greater importance on their appearance as an influence on their feelings of well-being. Although there were no sex differences in degree of physical activity, women were more likely than men to exercise to try and lose weight. The finding that age was not related to body focus or body dissatisfaction for either sex. For women and older men, the degree to which they exercised was not associated with any of the body image variables. A very different pattern of relationships was found for young men. Greater body satisfaction was associated with increases in exercise participation and with increased body focus, a variable that was also associated with increased levels of exercise. The profile of results is considered in the context of social influences such as health promotion and sex roles factors that have likely affected current attitudes to physical appearance and physical attractiveness among both sexes.

Annesi, J.J. (2000) conducted a research on the effects of minimal exercise and cognitive behavior modification on adherence, emotion change, self-image, and physical change in obese women The present investigation tested a 12-wk. treatment protocol which employed low intensity cardiovascular and resistance

exercise as well as cognitive-behavior modification on 13 obese, previously sedentary women. Separate analyses were conducted on program maintenance, emotional change, and physiological change. Although self-motivation was lower in the treatment group than in the control group (n = 35), measures of exercise maintenance were significantly higher. Analyses within the treatment group only indicated significant improvements in measures of State Anxiety, Depression, Anger, Fatigue, Tension, Vigor, Health Evaluation, Body Area Satisfaction, and heightened Overweight Preoccupation over the 12 weeks. Their feelings alter individual bouts of exercise indicated significantly increased Positive Engagement, Revitalization, and Tranquility, and reduced Physical Exhaustion. Maximum volume of oxygen uptake (VO_2max) significantly increased (2nd to 10th percentile), but not resting heart rate. No significant correlation was found between cardio respiratory change and change in scores on depression and anxiety. No significant association was found between physiological change and change in body image Preliminary evaluation of the minimal exercise treatment was given. The need to replicate findings with larger and different samples was emphasized.

Penedo, F. J., Dahn, J. R. (2005) in their study Exercise and well-being: a review of mental and physical health benefits associated with physical activity, highlighted recent work evaluating the relationship between exercise, physical activity and physical and mental health. Both cross-sectional and longitudinal studies, as well as randomized clinical trials, were included. Special attention was given to physical conditions, including obesity, cancer, cardiovascular disease and sexual dysfunction. Furthermore, studies relating physical activity to depression and other mood states were reviewed. The studies included diverse ethnic populations, including men and women, as well as several age groups (e.g. adolescents, middle-aged and older adults). Results of the studies continued to support a growing literature suggesting that exercise, physical activity and physical-activity interventions have beneficial effects across several physical and

mental-health outcomes. Generally, participants engaging in regular physical activity display more desirable health outcomes across a variety of physical conditions. Similarly, participants in randomized clinical trials of physical-activity interventions showed better health outcomes, including better general and health-related quality of life, better functional capacity and better mood states. The studies have several implications for clinical practice and research. Most work suggests that exercise and physical activity are associated with better quality of life and health outcomes. Therefore, assessment and Promotion of exercise and physical activity may be beneficial in achieving desired benefits across several populations. Several limitations were noted, particularly in research involving randomized clinical trials. These trials tend to involve limited sample sizes with short follow-up periods, thus limiting the clinical implications of the benefits associated with physical activity.

Hausenblas, H.A., & Fallon, E.A. (2005) conducted a research on Exercise and body image: A meta-analysis. Meta-analytic procedures to integrate research findings examining the impact of exercise on body image. They performed extensive literature searching strategies and located 121 published and unpublished studies that examined the impact of exercise on body image. Primary study results were coded, and meta-analytic procedures were conducted. Studies were grouped into intervention (i.e., exercise *vs* non-exercise group post-exercise intervention body-image scores), single group (i.e., pre *vs* post exercise intervention body-image scores), and co relational (i.e., exercisers *vs* non-exercisers body-image scores) effect sizes. Small effect sizes (that were weighted by sample size), that were significantly different from zero, indicated that: (a) exercisers had a more positive body image than non-exercisers (b) exercise intervention participants reported a more positive body image post intervention compared to the non-exercising control participants; and (c) exercisers had a significant improvement in body image scores following an exercise intervention. We concluded that exercise was associated with improved body image are

Moderating variables and implications for exercise prescription to improve body image.

Singh, T.D., Bhardwaj, G. and Bhardwaj, V. (2009) conducted a study on Effect of Self-Efficacy on the Performance of Athletes. The purpose of the study was to investigate the effect of the psychological trait self-efficacy on the sports performance of the male and female athletes in the age group of 13 to 19 yrs from the schools of Punjab and Chandigarh. The subjects comprised of 200 athletes from the disciplines of Cricket, Kho-Kho, Volleyball, Softball and Athletics. Out of them 100 belonged to Inter-School level and 100 to School National level. The data was collected using Self-efficacy Questionnaire developed by Bandura (1977). The results were drawn using 2x2 ANOVA which showed that School National Level athletes were significantly better on perceived physical ability and self-efficacy than the School District Level athletes.

Vocks, S., Hechler, T., Rohrig, S., & Legenbauer, T. (2009) conducted a research on Effects of a physical exercise session on state body image and mood. In a cross-over design, participants were randomized to two groups starting either with physical exercise (PE is experimental condition) or with reading a newspaper (RN is control condition). Before and after PE and RN, participants (N = 65) rated their body dimensions using a digital photo distortion technique and indicated their attitudinal body image and mood. Participants' judgments of their 'felt' body dimensions and attitudes toward their own body were affected differently by PE and RN, indicating that participants felt slightly slimmer and were more satisfied with their bodies after PE. Exercise-induced changes in body perception were greater, the higher the pre-experimental drive for thinness, body dissatisfaction and weight/shape concerns were. Especially in those participants with higher body image disturbances, physical exercise can have a reinforcing effect on immediate body image and mood improvement.

This chapter explains the methodological details that will be implemented in the study. Specifically, Research Method, Research design, Population of the study, Variables, Sample - type of sample, sample size, Data collection tool and Data analysis tool to be used and an explanation of data analysis. Overall procedure of the study and Year plan.

Research Method

Quantitative Research provides the researcher a clearer picture of what to expect in his research. Quantitative Research is objective in approach in the sense that it only seeks precise measurements and analysis of target concepts to answer his inquiry. Here the aim of the researcher is to find out the answer to an inquiry through numerical evidence, therefore Pre-Test Post-Test single group experimental research design will be used in which there will be experimental group only.

Population

The population will comprise of all students enrolled for bachelors in education program or integrated program (B.Sc. B.Ed / B.A B.Ed) in the state of Goa affiliated to Goa University.

Sample, Sampling Method and Sample size

A tentative sample size of one hundred pre-service teachers would be selected for the study. They will be treated as experimental group. The present research will be based on convenient sampling of availibity of pre-service teachers enrolled for

bachelors in education program or integrated program (B.Sc. B.Ed / B.A B.Ed) in the state of Goa for that particular academic year when the study will be conducted.

Variables of the study

- **Independent variable**
  - Specific exercise program
- **Dependent variable**
  - Flexibility
  - Muscular Strength
  - Emotional State
  - Mental Health

Tools for Data Collection

Data collection tool to measure psychological variable will be standardized questionnaires on emotional states and mood (8 STATE QUESTIONNAIRE) and for mental health (Mental Health Battery). And data collection tool to measure physical variable will be standardized test on flexibility (V-sit and Reach) and for muscular endurance (1-minute push-up). Data will be collected before the training program and after the training program.

- **Personal data sheet:**

  The personal data sheet will be used to obtain basic information of the pre-service teachers.

Statistical Tool for Data Analysis

The following statistical tools shall be used in order to analyze the data on the sample group.

- Descriptive Statistics.
- ANOVA.
- Pearson’s product-moment correlation coefficient.

Procedure of the Study

Data appropriate and suitable to the topic of the research shall be gathered from various books, journals, newspapers and internet regarding chapter 1 and chapter 2. The researcher will develop a specific exercise program with combination of three yoga exercises and three specific body weight exercises by referring to past data available if any. The program will be face validated by three experts. Pilot study will be done and then major study will be start. The researcher will be using quantitative research method where Pre-Test Post-Test Experimental design will be used. The present research will be based on convenient sampling. Data collection tool used would be the standardized ones. A tentative of one hundred pre-service teachers will be used for the study and they will be called the experimental group.

The questionnaires shall have brief and concise information about the research and purpose of the study. Instructions will be given to the pre-service teachers before filling these questionnaires by the researcher. Pre-Test data will be collect, intervention program of specific exercise program with combination of three yoga exercises and three specific body weight exercises will be given to experimental group for twenty weeks(five months) and then after that an intervention program will be administered and then post-test data will be collected from the experimental group. Data analysis will be done using SPSS software: ANOVA, Pearson’s product-moment correlation coefficient; after that data will be interpreted and conclusion will be derived.

Proposed work Plan/ Formulation and Structure of Study:

1st Year Plan	Collection of Literature Review
	Pilot study
	Submission of Progress Report
	Detail study
	Data Collection Pre-Training
	Compilation of data Pre-Training
	Submission of Progress Report
2nd Year Plan	Conduct of Specific body weight exercise program
	Data Collection Post-Training
	Compilation of data Post-Training
	Submission of Progress Report
	Preparation of Research Paper
	Submission of data
3rd Year Plan	Use of SPSS Software
	Data Interpretation
	Final Compilation of Data
	Preparation of Research Paper & Communicating it for Publication
	Report Writing
	Submission of Final Report

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